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EXAMINER

VU, TUAN A

ART UNIT	PAPER NUMBER
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2193

MAIL DATE	DELIVERY MODE
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08/13/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/769,535

Applicant(s)

MOSKOWITZ ET AL.

Examiner

Tuan A. Vu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18, 21 and 22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18, 21 and 22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This action is responsive to the Applicant's response filed 6/04/07.

As indicated in Applicant's response, claims 1-18 have been amended, and claims 21-22 added, claims 19-20 canceled. Claims 1-18, 21-22 are pending in the office action.

Claim Objections

2. Claims 1, 7, 16-17, 21-22 are objected to because of the following informalities:

Claims 1, 7 recite 'expected computer code having a plurality of lines based on the model'. This amounts to an outstretched language that does not appear to be matched with the actual description provided in the Specifications. According to the Specifications, the model_file 101 is a file containing constructs of a (e.g. SIMULINK) model and can be realized into visual and interconnected blocks representing a system (see pg. 6, 2nd and 3rd para). It is by conversion that an Autocode generator 106 yields the actual source code having a plurality of lines; but this source code is the 'generated computer code' which is to be matched against the model constructs. The language claiming that this 'expected computer code' does have a plurality of lines needs to be corrected for fear that this would turn into a non-enabling type of limitation, thus subject to rejection under USC § 112. The limitation will be treated as code constructs defining blocks of a model, each definition represented by some plurality of text lines.

Claims 16-17, 21-22 also recite 'plurality of lines' pertinent to this 'expected computer code', and this is objected to because this amounts to a improper language usage failing to legitimately represent what is not conveyed in the Disclosure.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

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3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 7, 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Charisius et al, USPN: 6,983,446 (hereinafter Charisius).

As per claim 1, Charisius discloses a method for verifying a generated computer code having a plurality of lines (e.g. Fig. 4) generated from a model of a system comprising:

processing the model (template 1102 - Fig. 11; Fig. 13) to determine an expected computer code having a plurality of lines based on the model (e.g. Fig. 3; Fig. 13-14 – Note: language neutral representation of a graphical model constructs having templated definitions – see col. 5, lines 61-64; col. 6, lines 12-22; Fig. 5; *definitions, templates*, Fig. 8B-C; col. 7, lines 63 to col. 8, line 21; Fig. 19A, 20A – reads on plurality of lines);

comparing the generated computer code (e.g. Fig. 4; Fig. 19B-C; Fig. 8B-C; code 1302 – Fig. 13 – Note: generated code lines 810, 812, 1302 being compared with expected code having lines of definitions in templates reads on comparing expected and generated) and the expected computer code to determine if the generated computer code and the expected computer code match (e.g. Figs. 8, 13, 19; Table 1-9; col. 3, lines 38-44, 55-63 – Note: Verification and audit console reads on determining by comparing whether actual code matches expectation); and

transmitting an error message (e.g. col. 3, lines 38-44, 55-63) if the generated computer code and the expected computer code do not match.

As per claim 7, Charisius discloses a computer-readable storage medium containing a set of instructions for verifying a generated computer code having a plurality of lines, the generated computer code automatically generated from a model of a system (Fig. 13, 19), the set of instructions comprising:

code that reads in a model file; code that determines an expected computer code having a plurality of lines based on the model file (e.g. Fig. 3; Fig. 13-14; col. 5, lines 61-64; col. 6, lines 12-22; Fig. 5; *definitions, templates*, Fig. 8, col. 7, lines 63 to col. 8, line 21; Fig. 19A); code that reads in the generated computer code; and

code that compares the generated computer code to the expected computer code (e.g. Fig. 4; Fig. 19B-C; Fig. 8B-C; code 1302 – Fig. 13 – Note: generated code lines 810, 812, 1302 being compared with expected code having lines of definitions in templates reads on comparing expected and generated) to determine if the generated computer code and the expected computer code match (e.g. Figs. 8, 13, 19; Table 1-9; col. 3, lines 38-44, 55-63 – Note: Verification and audit console reads on determining by comparing whether actual code matches expectation); and

transmitting an error message (e.g. col. 3, lines 38-44, 55-63) if the generated computer code and the expected computer code do not match.

As per claim 12, Charisius discloses a system for verifying the contents of a generated computer code generated from a model comprising:

a processor operable to compare the generated computer code (e.g. Figs. 8, 13, 19 --
Note: generated code lines 810, 812, 1302 being compared with expected code having lines of

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definitions in templates reads on comparing expected and generated) with an expected computer code, and

transmit an error message (e.g. col. 3, lines 38-44, 55-63) if the generated computer code and the expected computer code do not match., the expected computer code (e.g. Fig. 3; Fig. 13-14; col. 5, lines 61-64; col. 6, lines 12-22; Fig. 5; *definitions, templates*, Fig. 8, col. 7, lines 63 to col. 8, line 21; Fig. 19A) generated by the processor based from the model; and

a display configured to display the error message the display coupled to the processor (e.g. col. 3, lines 38-44, 55-63; *wrong* 810 – Fig. 8B).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2-6, 8-11, 13-18, 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Charisius et al, USPN: 6,983,446.

As per claims 2-4, Charisius discloses verify each of the lines of the generated computer code is in a proper format (e.g. coding styles – Fig. 19A; col. 20-31 – Note: QA/Audit tool to check source construction line by line code style against auditing rules – see Fig. 19C -- reads on proper format – see Table 11); to determine if the generated computer code includes any line of code not in the expected computer code (*synchronized ... updated automatically* – col. 5, lines 34-60; Fig. 20B; *Counts the number of code lines* -Table 1); to determine if the lines of the

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generated computer code are in a logical order (e.g. Table 1, Table 2, table 3, table 4, col. 10-12; Fig. 19b, 19C; col. 4 line 66 to col. 5, line 9);

But Charisius does not explicitly teach transmitting an error message if the generated code under analysis is not in the proper format, or if it includes any line not in the expected computer code, or if it is not in a proper logical order. But based on the message error to let the developer be visually informed from the onset (e.g. col. 3, lines 38-44, 55-63; *wrong* 810 – Fig. 8B), it would have been obvious for one skill in the art at the time the invention was made to implement the source code auditing by Charisius so that when any code format, line count, line logical order as metric for auditing as set forth above does not match with the that of expected code, some error messages would be visually generated in order for the developer to effectuate proper verification of the intended target code.

As per claims 5-6, Charisius discloses comparing a header information section of the generated computer code to an expected header information section to determine if the header information section of the generated computer code matches the expected header information (e.g. *Declaration* – cols. 25-26; match a declaration, col. 37, lines 1-37- Note: generated source code or class package declaration with respect to expected declaration in OO class or Use case package – see Fig. 14-15, 22 -- in an *audit* instance reads on comparing header of a class signature declaration); and comparing a generated declared variable section of the generated computer code to an expected declared variable section of an expected computer code to determine if the generated declared variables section matches the expected declared variable section (e.g. Figs 19; Declaration Style -col. 31-35; Naming style, Performance – col. 36-39).

But Charisius does not explicitly teach transmitting an error message if the header section of generated code under analysis does not match the expected header, or if the generated declared variable section does not match the expected declared variable section; but this error transmitting limitation has been addressed in claims 2-4 above.

As per claims 8-10, refer to claims 2-4, respectively.

As per claim 11, Charisius discloses a header information (Note: signature of a OO Class reads on a formal header declaration – see cols. 25-26) section of the generated computer code to an expected header information section to determine if the header information section of the generated computer code matches the expected header information (e.g. *Declaration* – cols. 25-26; *match a declaration*, col. 37, lines 1-37- Note: generated source code or class package declaration with respect to expected declaration in OO class or Use case package – see Fig. 14-15, 22 -- in an *audit* instance reads on comparing header of a class signature declaration).

But Charisius does not explicitly teach transmitting an error message if the header section of generated code under analysis does not match the expected header, but this error transmitting limitation has been addressed in claims 2-4 above.

As per claims 13-14, Charisius discloses wherein the results of the comparison indicates if the generated computer code has all of the content of the expected computer code (e.g. Fig. 8A-B; Fig. 20; *synchronized ... updated automatically* – col. 5, lines 34-60); wherein the results of the comparison indicates if the generated computer code has any additional content not found in the expected computer code (e.g. col. 5, lines 34-60– Note: auditing tool to match each constructs of the lines of code with format required for OO syntax construction based on

template and graphical representation – see Figs 11, 19, 20 – maps with indication as to any additional content is not found – see *update view* Fig. 9; *incremental code editor* – Fig. 7).

But Charisius does not explicitly teach transmitting an error message if in the generated code all the content is not matched; or if any additional content is not found. However, this error transmitting limitation has been addressed in claims 2-4 above.

As per claims 15-17, refer to claims 2-4, respectively.

As per claim 18, refer to claim 5.

As per claims 21-22, Charisius discloses comparing the generated computer code (e.g. Fig. 4; Fig. 19B-C) to the expected computer code to determine if the generated computer code includes all of the lines (e.g. *synchronized ... updated automatically* – col. 5, lines 34-60) of the expected computer code.

But Charisius does not explicitly disclose generating an error if the generated code does not include all the lines of the expected code. However, this error transmitting limitation has been addressed in claims 2-4 above.

Response to Arguments

7. Applicant's arguments filed 6/4/07 have been fully considered but they are not persuasive or mostly moot in view of the new grounds of rejection, **which are necessitated by the Amendment**. Following are the Examiner's observation in regard thereto.

35 USC § 102 Rejection:

8. Applicants have submitted that Charisius fails to teach or suggest 'comparing the generated computer do to the expected computer code' for a match in that Charisius' tool is for automatically updating textual representation of source code and graphical representation

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thereof, thus not the same as verifying if lines of generated code is the same as that of the model (Appl. Rmrks pg. 10, bottom, pg. 11, top). In response, the rejection has explicitly mapped what part corresponds to generated code having lines of source code and which parts represent a expected code being based on a model. The rejection has gone at length identifying Charisius's setup for comparing (via metrics criteria) within a visual tool thereby generated source lines are to be verified against expected criteria provided in a model-derived template in which expected code definition enable such verification to identify discrepancies typical in a verification or a audit process; i.e. if the expected code format does not match that of an actual code, the developer should be visually informed thereof. There is nothing compelling in the claim language that would preclude the templated definitions from Charisius from reading into a expected computer code (each definition comprising plurality of lines); nor does the claim preclude the generated source lines in Charisius' tool from reading into generated computer code. To make matter worse, claim 1 recites (i) generated computer code having plurality of lines **from a model**; (ii) determine an expected computer code having plurality of lines **based on the model**. One of ordinary skill in the art would wonder how indeed can *computer code* generated in (i) and (ii) -- from a same model-- can create a clear real-world possibility that they would include significant discrepancies with respect to each other. Notwithstanding the indefiniteness in (i) and (ii), the claim does not provide a single implementation details about the nature of the so-called *plurality of lines* or about what exactly constitutes this code generation process, nor does it about what *computer code* really amounts to in terms of syntax, construct or visual representation. In accordance with USC § 112 and § 106, it is expected that the claims have solid support from the Specifications; and one would wonder how this *expected computer*

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code generated from a model actually contains, if any, source code lines, based on the Specifications (see model_file 101, based on SIMULINK, pg. 6) wherein a generator 106 converts model block into code_file 103. For lack of proper language usage, this plurality of lines recited along with this 'expected computer code' will bear little patentable weight; and based on broad interpretation, the expected computer code will be treated as the very definitions provided by actualizing a model into some template forms, definition therein, or annotated diagram blocks; which is exactly what Charisius discloses, and by comparing the derived source code to such definition content (see Rejection and cited Figures), that the metrics can be analyzed in Charisius' verification visual tool. The argument is not persuasive: Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

(B) The Applicants have submitted that Charisius cannot teach that 'expected computer code' and 'generated computer code' are in same format (Appl. Rmrks pg. 11, 2nd para) and that Charisius purpose for just synchronizing is not same as comparing then transmitting error message. In response, the claim language is not provided with sufficient format-related teachings for the code representation in Charisius from reading away from 'expected' and 'generated' computer code, and proffering that Charisius' tool is for synchronizing only appears largely an incorrect statement in view of the verification endeavor by Charisius. Based on the objection to the claimed 'plurality of lines' of the 'expected computer code', and the issues mentioned in section A, the argument is by far not sufficient to successfully point out how the language of the claims patentably distinguishes them from the references.

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(C) The rest of the claims depend on independent claims 1, 7, and 12 hence remain rejected in view of the above analysis.

In all, the claims stand rejected as set forth in the Office Action.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

USPN: 6993759, teaches about matching version of code – incorporated by reference in Charisius.

USPN: 6993710, teaches about identifying mismatch in source lines – incorporated by reference in Charisius.

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan A Vu whose telephone number is (571) 272-3735. The examiner can normally be reached on 8AM-4:30PM/Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571)272-3756.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273-3735 (for non-official correspondence - please consult Examiner before using) or 571-273-8300 (for official correspondence) or redirected to customer service at 571-272-3609.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tuan A Vu
Patent Examiner,
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August 07, 2007